

NAVAL AIR STATION, D. C.

TABLE 3.—Mean free-air temperature, humidity, and vapor pressure and resultant wind (m. p. s.) during August, 1925, at Washington, D. C.

Altitude m. s. l. (m.)	Naval Air Station (7 m.)			Weather Bureau (34 m.)	
	Temperature ° C.	Relative humidity %	Vapor pressure (mb.)	Wind	
				Direction	Velocity
Surface.....	22.4	79	21.52	N. 27° W.	0.7
250.....	21.9	71	18.60	N. 38° W.	1.3
500.....	22.1	65	17.18	N. 53° W.	1.5
750.....	20.9	65	16.04	N. 50° W.	1.4
1,000.....	19.4	67	15.03	N. 58° W.	1.5
1,250.....	17.9	68	13.93		
1,500.....	16.0	69	12.83	N. 36° W.	2.2
2,000.....	13.2	68	10.56	N. 31° W.	3.3
2,500.....	10.4	61	7.96	N. 38° W.	3.8
3,000.....	7.4	57	5.97	N. 47° W.	4.4
3,500.....	3.6	58	4.23	N. 60° W.	5.1
4,000.....	-0.2	66	3.51	N. 62° W.	5.3
4,500.....	-2.0	46	1.57	S. 87° W.	5.5
5,000.....	-3.8	39	0.85	N. 81° W.	6.5

THE WEATHER ELEMENTS

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PRESSURE AND WINDS

The important feature in the distribution of the mean atmospheric pressure was the distinct upbuilding of the high pressure area usually existing over the Southeastern States, and its northward extension into the Great Lakes region, New England and the Canadian Maritime Provinces. In fact the pressure for the month was distinctly of the anticyclonic type, an unusual number of high areas entering the country from the Canadian Northwest, and persisting for rather lengthy periods over the more eastern districts, particularly during the last decade.

Cyclones were, as usual in summer, mainly of slight intensity, and those maintaining their identity over any extensive tracks were confined largely to the more northern districts.

The only important cyclone to traverse the interior districts had its origin in the far Southwest and assumed definite proportions by the morning of the 11th, when it was central over Kansas. During the following three days it moved slowly Northeastward to southern New England, attended by precipitation over considerable areas near its center, the falls being heavy in portions of Iowa, Illinois and Missouri, moderate in some near-by localities, and generally light to the eastward.

Average pressure was above normal over the entire United States, save for a small area in the far Northwest, and in Canada also except over small areas near the borders of Montana and North Dakota. Over all central and eastern districts it was well above the normal.

Compared with July pressures, those for August were higher over all southern, and most central and eastern districts, and in Canada from the Great Lakes eastward, the excesses over the July values being unusually large for a summer month in the Great Lakes, St. Lawrence Valley and near-by areas. In the Northwestern districts and over western Canada the August averages were materially lower than those for July.

Winds were mainly light, a number of stations reporting the least total movement of record for August, and in some cases less movement than for any previous month.

The usual number of local high winds associated with thunderstorms occurred, though loss of life and damage

to property were mainly less than frequently happens in August.

Since the center of high pressure was over the middle Appalachian Mountain region, the wind circulation over the eastern third of the country conformed mainly to that usual in anticyclonic areas, from the Northeast over the Atlantic coast districts, easterly in the Gulf States, southerly in the middle Mississippi Valley; and south to southwest in the Great Lakes region. Between the Mississippi Valley and the Rocky Mountains the prevailing winds were almost uniformly from the south. In the far West, particularly along the California coast, where in August the winds are mainly strong from the northwest, this month they were frequently from the south or southwest, and generally light.

The important details of the principal wind, hail, or other storms are given in the table following this section.

TEMPERATURE

There were few important rapid temperature changes, though there were some unusually heated periods, and others that were distinctly cool, but these were the result mainly of gradual heating or cooling.

The first few days were moderately cool from the Rocky Mountains eastward; in fact over portions of the Middle Plains the first was the coldest day of the month, in a few sections the coldest of record so early in August. At the same time some of the highest temperatures were experienced in the far West. For the week ending the 11th temperatures were mainly moderate, though above normal generally over the northern and eastern districts and below in the Southwest.

The week ending the 18th was on the whole warmer than normal from the Great Plains eastward, the excesses becoming greater toward the south. In the far West, particularly over the Plateau, this week was distinctly cool. The week ending the 25th continued warm during the greater part over the central and eastern districts, the 19th and 20th being excessively warm over the Southeastern States where the maximum temperatures, ranging up to 110°, were in many cases the highest ever experienced in August, and in some cases higher than for any previous month. In the far West this week was moderately cool, freezing temperatures being reported from exposed points in Idaho and Oregon.

The last week was mainly warmer than normal between the Appalachian and Rocky Mountains, and cooler in the Plateau and Southwest, and over the Atlantic and Gulf coast districts, the coolest weather of the month occurring about the 28th in portions of the North Atlantic States.

The average temperature as a whole was above normal over the Great Lakes, the central valleys and most of the Southern States from Texas eastward, though the excesses were mainly small. The month was moderately cooler than normal from the central portions of Texas, Oklahoma, and Kansas westward, generally over the Plateau and Pacific States, and locally near the middle Atlantic coast.

Maximum temperatures reached 100° or more at some time during the month in practically all except the northeastern States, the highest reported, 120°, occurring in southern California. They reached 113° in Arizona, 112° in Nevada and Texas, and 110° in Georgia. The most extensive warm period was about the 17th to 20th, when temperatures in excess of 100° were experienced generally from the middle and southern plains eastward to the Atlantic coast.

The coolest periods were on the 1st in portions of the central valleys, but mainly during the last decade over the remaining portions of the country. Readings below freezing were reported in all the northern border states. The lowest observed was 14° in the mountains of Oregon.

PRECIPITATION

August was, for most of the country, one more dry month in a year in which, up to date, months of well distributed and ample rainfall have been few.

The regions west of the Rocky Mountain Divide had usually more rainfall than normal, with comparatively good distribution, although amounts were especially large for the region in a few localities, causing damage by flood. The northern part of the eastern slope of the Rockies was well watered, likewise much of the southern Plains and of the middle Mississippi Valley.

The Plains from central Nebraska northward had a considerable shortage as had most of Oklahoma and central and eastern Texas, while nearly all the eastern half of the country had a decided deficiency.

The drought in August was remarkably severe in the southern Appalachian region, including the western portions of the Carolinas, the eastern two-thirds of Tennessee, and the northern two-thirds of Georgia. In this region July had been comparatively dry, and remarkably so in western North Carolina. As a result the most serious drought within the memory of old people prevailed widely as August ended, many deep wells having failed, small streams being dry where never so known before, rivers being at extremely low stages, and hydroelectric service greatly restricted.

The average rainfall at points in Alabama was the least for August since the weather service was organized, more than 50 years ago. The shortage was well marked throughout the lower Mississippi Valley, and thence north to southwestern Missouri, also northeast to western Pennsylvania.

In Minnesota and northwestern Iowa and thence eastward to include northern Michigan, except the immediate

shore of Lake Superior, there was likewise remarkably little precipitation and forest fires were unusually troublesome for August. In nearly all of New York and New England August was a remarkably dry month, but here July had generally brought ample rain, save in Maine, so usually conditions were not unfavorable. From southern Massachusetts to northern Florida the majority of the coast districts had considerable rain, though almost nowhere as much as normal.

The one eastern district of marked excess was in the Florida Peninsula, where numerous stations had twice their usual large August falls, one station in Dade County recording 17.56 inches.

The year 1925 to date has been marked by prolonged dryness over practically all the Gulf States and large areas to the northeast. In Texas every month of 1925 to date has averaged drier than normal and from Louisiana to Alabama and the eastern portions of Tennessee, northern Georgia, and the western portions of the Carolinas and Virginia every month except January. Likewise toward the northeast as far as the southern lake region each state shows six or seven months out of the eight from January to August, inclusive, deficient in precipitation.

In Arkansas and Tennessee the average deficiency for each State for the eight-month period is about 13 inches, and in Louisiana, Mississippi and Alabama over 10 inches, while over the western third of North Carolina it is almost 18 inches.

RELATIVE HUMIDITY

The percentages of relative humidity were less than normal over nearly all portions of the country from the Great Plains eastward, the principal exceptions being locally over a narrow area from the lower Mississippi Valley northeastward to the Great Lakes. From central Texas and the southern Plains eastward to the Atlantic Coast it ranged from 15 to nearly 30 per cent less than normal.

SEVERE LOCAL HAIL AND WIND STORMS, AUGUST, 1925

The table herewith contains such data as have been received concerning severe local storms that occurred during the month. A more complete statement will appear in the Annual Report of the Chief of Bureau]

Place	Date	Time	Width of path, yards ¹	Loss of life	Value of property destroyed	Character of storm	Remarks	Authority
Fleming, Colo. (near)	1	P. m.				Hail and wind	Trees, fences and several barns blown down; some crop damage.	Official, U. S. Weather Bureau.
Dallas County, Iowa	2					Hail	Character of damage not reported.	Do.
Beaver County, Okla.	3		4 mi.			Destructive hail	Heavy loss of crops; residences and other buildings damaged; poultry and cattle killed. Path 8 miles long.	Do.
Clark, Fayette and Bourbon Counties, Ky.	3				\$125,000	Hail	About 300 acres of tobacco destroyed and corn damaged.	Do.
Berlin, N. H.	3	12.45-1.20 p. m.	2 mi.		15,000	Severe hail	Crops and windows badly damaged.	Do.
Detroit, Mich.	3					Violent hail, rain and thunderstorm.	Streets and basements flooded in some places to a depth of 18 inches.	Indianapolis Star.
Indianapolis, Ind.	3	3.33-5.55 p. m.				Thunderstorm and hail.	Traffic demoralized for more than an hour; foliage shredded; 1 person injured.	Official, U. S. Weather Bureau; Indianapolis Star.
Tampa, Fla. (west of)	3	5.25-8 p. m.				Violent thunderstorm.	No damage reported.	Official, U. S. Weather Bureau.
Greensburg, Pa.	3	9 p. m.				Thunderstorm	Building excavation flooded; other minor damage.	Do.
Lincoln County, Wis.	4	11 a. m.-2 p. m.	3 mi.		50,000	Heavy hail	Growing crops badly damaged.	Do.
Humboldt County, Iowa	4	3.30 p. m.	2 mi.			Hail	Corn damaged 80 per cent in places.	Do.
Sarasota Beach, Fla.	4	5 p. m.				Small tornado	Two portable houses and a garage leveled; other minor damage.	Do.
Pittsfield, Wis.	4	5 p. m.	880		75,000	Heavy hail	Damage principally to growing crops.	Official, U. S. Weather Bureau.
Mower County, Minn. (central part of)	4	P. m.				Hail	Much damage to corn stripped by hail.	Pioneer Press (Minneapolis, Minn.).
Raleigh, N. C., and vicinity	4					Thunderstorm and high wind.	Telephone poles, chimney, and buildings of light construction damaged. Crops and fruit suffer from high wind.	Official, U. S. Weather Bureau.

¹ "Mi." signifies miles, instead of yards.